Digitized by Sam Nudge
on October 3, 2022

wheelock
THE SIGNAL SOURCE℠

INSTALLATION INSTRUCTIONS
ELECTRONIC HORN AND STROBE HORN

GENERAL APPLICATION INFORMATION

The Electronic Horns and Electronic Strobe Horns are UL listed for Fire Protective Service. They are designed to produce high sound output with minimal current requirements.

The EH Electronic Horns provide an audible signal for coded or continuous alarm systems. The EHS Electronic Strobe Horns are parallel wired so the audible signal and strobe operate in unison. They are recommended for ease of wiring in continuous alarm systems. The EH-D(E)-WS(WH) Electronic Strobe Horns have independent input terminals for the audible signal and strobe. They are recommended for use on coded alarm systems where the audible signal is interrupted while the strobe flashes continuously. They are also recommended for systems that require independent control of the audible and visual alarms. Shunt wires are provided if parallel operation is desired (See wiring diagram). Electronic Horns are available in either 12VDC or 24VDC. Electronic Strobe Horns are available in either 12VDC or 24VDC with a 12,000cp (1.5cd) or 70,000cp (15cd) Xenon tube strobe.

SPECIFICATIONS

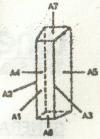
		AUDIBLE SIGNAL								STROBE			
				dBA AT 10 FEET									
				ANECHOIC									
		INPUT CURRENT AMPS		12VDC		24VDC		REVERBERANT PER UL 464					
MODEL NUMBERS	INPUT VOLTAGE (VDC) *	12 VDC	24 VDC	TYPICAL	PEAK	TYPICAL	PEAK	12 VDC	24 VDC	INPUT CURRENT AMPS	PEAK CANDLE POWER	CANDELA UL 1638	MOUNTING OPTIONS (SHT.2)
EH-DL1	24VDC	.016	.017	90	98	96	103	82	88	—	—	—	B,F
EH-EL1	24VDC	.016	.017	90	98	96	103	82	88	—	—	—	A,C,D,E
EHS-DL1	24VDC	—	.035	—	—	96	103	—	86	—	12,000	1.5	B,F
EHS-EL1	24VDC	—	.035	—	—	96	103	—	86	—	12,000	1.5	A,C,D,E
EHS-DL1-WH	24VDC	—	.092	—	—	96	103	—	85	—	70,000	15.0	B,F
EHS-EL1-WH	24VDC	—	.092	—	—	96	103	—	85	—	70,000	15.0	A,C,D,E
EH-DL1-WS-24	24VDC	—	.017	—	—	96	103	—	85	.025	12,000	1.5	B,F
EH-EL1-WS-24	24VDC	—	.017	—	—	96	103	—	86	.025	12,000	1.5	A,C,D,E
EH-DL1-WH-24	24VDC	—	.017	—	—	96	103	—	85	.075	70,000	15.0	B,F
EH-EL1-WH-24	24VDC	—	.017	—	—	96	103	—	86	.075	70,000	15.0	A,C,D,E
EH-DL2	12VDC	.040	—	96	103	—	—	88	—	—	—	—	B,F
EH-EL2	12VDC	.040	—	96	103	—	—	88	—	—	—	—	A,C,D,E
EHS-DL2	12VDC	.090	—	96	103	—	—	86	—	—	12,000	1.5	B,F
EHS-EL2	12VDC	.090	—	96	103	—	—	86	—	—	12,000	1.5	A,C,D,E
EHS-DL2-WH	12VDC	.190	—	96	103	—	—	86	—	—	70,000	15.0	B,F
EHS-EL2-WH	12VDC	.190	—	96	103	—	—	86	—	—	70,000	15.0	A,C,D,E
EH-DL2-WS-12	12VDC	.040	—	96	103	—	—	86	—	.050	12,000	1.5	B,F
EH-EL2-WS-12	12VDC	.040	—	96	103	—	—	85	—	.050	12,000	1.5	A,C,D,E
EH-DL2-WH-12	12VDC	.040	—	96	103	—	—	85	—	.150	70,000	15.0	B,F
EH-EL2-WH-12	12VDC	.040	—	96	103	—	—	85	—	.150	70,000	15.0	A,C,D,E

NOTES: The EH-DL1 and EH-EL1 models are rated for 24VDC; however, they will operate at reduced output (see table).

- Typical dBA measured in anechoic chamber with fast meter response.
- dBA measured in reverberant room per UL Standard 464.
- EHS input current ratings include both audible signal and strobe.
- At -35 degrees C the following UL minimum candela ratings apply: 1.5cd (12,000cp) models - .75cd; 15cd (70,000cp) models -7.5cd

* All models operate +/- 20% of rated voltage per UL 464 and UL 1638.

COLORED LENSES: PEAK CANDLE POWER/MIN UL CANDELA RATINGS - PER UL 1638					
INPUT VOLTAGE	INPUT CURRENT (AMPS)	WHITE LENS		RED LENS	
		cp	cd	cp	cd
12VDC	.050A	12.0K	1.5	4.8K	0.60
24VDC	.025A	12.0K	1.5	4.8K	0.60
12VDC	.150A	70.0K	15.0	28.0K	6.00
24VDC	.075A	70.0K	15.0	28.0K	6.00



% OF LIGHT OUTPUT AT VARIOUS VIEWING ANGLES: RATINGS PER UL 1638

MODEL NUMBER	CANDELA	CANDLE POWER	ANGLES: % OF RATED LIGHT OUTPUT					
			A1	A2	A3	A4	A5	A6/A7
12VDC	1.5cd	12,000cp	100	111	79	90	34	2
24VDC	1.5cd	12,000cp	100	110	79	104	49	4
12VDC	15.0cd	70,000cp	100	125	96	97	48	6
24VDC	15.0cd	70,000cp	100	125	91	104	49	6

% of change noted: Use A1 (UL candela rating) as 100% reference point.

WIRING DIAGRAMS

ELECTRONIC HORNS	ELECTRONIC STROBE HORN (PARALLEL STROBE)		ELECTRONIC STROBE HORN (INDEPENDENT STROBE)	
EH-DL1	EHS-DL1	EHS-DL1-WH	EH-DL1-WS-24	EH-DL1-WH-24
EH-EL1	EHS-EL1	EHS-EL1-WH	EH-EL1-WS-24	EH-EL1-WH-24
EH-DL2	EHS-DL2	EHS-DL2-WH	EH-DL2-WS-12	EH-DL2-WH-12
EH-EL2	EHS-EL2	EHS-EL2-WH	EH-EL2-WS-12	EH-EL2-WH-12

A. Electronic Horns and EHS Electronic Strobe Horns.
(Parallel Strobe Figure 1.)

B. EH-DL(EL) Electronic Strobe Horn
Audible signal and strobe operate independently. (Figure 2.)

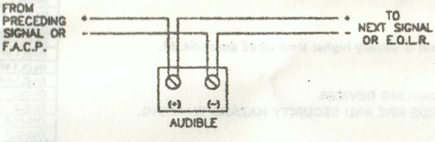


FIGURE 1.

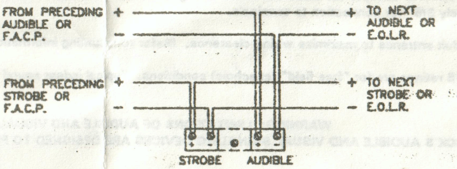

FROM PRECEDING AUDIBLE OR F.A.C.P.
+
−
+
−
TO NEXT AUDIBLE OR E.O.L.R.
FROM PRECEDING STROBE OR F.A.C.P.
+
−
+
−
TO NEXT STROBE OR E.O.L.R.
STROBE
AUDIBLE

FIGURE 2.

C. Audible Signal and Strobe operate in unison.
Red and Black shunt-wires are supplied. (Figure 3.)

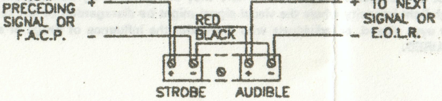
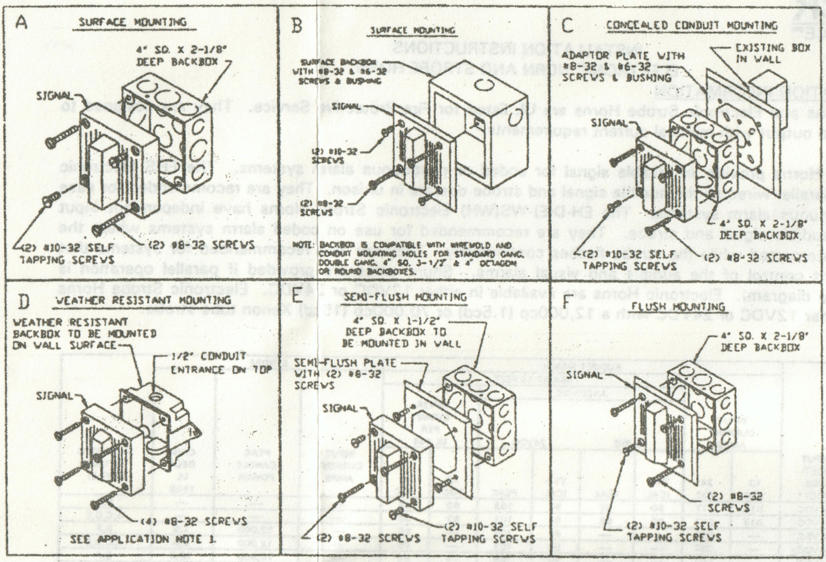


FIGURE 3.

MOUNTING OPTIONS

All Models are shown with optional strobe


A
SURFACE MOUNTING
4" SQ. X 2-1/8" DEEP BACKBOX
SIGNAL
(2) #10-32 SELF TAPPING SCREWS
(2) #8-32 SCREWS
B
SURFACE MOUNTING
SURFACE BACKBOX WITH #8-32 & #6-32 SCREWS & BUSHING
SIGNAL
(2) #10-32 SCREWS
(2) #8-32 SCREWS
NOTE: BACKBOX IS COMPATIBLE WITH WIREMOLD AND CONDUIT MOUNTING HOLES FOR STANDARD GANG, DOUBLE GANG, 4" SQ. 3-1/2" & 4" OCTAGON OR ROUND BACKBOXES.
C
CONCEALED CONDUIT MOUNTING
ADAPTOR PLATE WITH #8-32 & #6-32 SCREWS & BUSHING
EXISTING BOX IN WALL
SIGNAL
4" SQ. X 2-1/8" DEEP BACKBOX
(2) #10-32 SELF TAPPING SCREWS
(2) #8-32 SCREWS
D
WEATHER RESISTANT MOUNTING
WEATHER RESISTANT BACKBOX TO BE MOUNTED ON WALL SURFACE
1/2" CONDUIT ENTRANCE ON TOP
SIGNAL
(4) #8-32 SCREWS
SEE APPLICATION NOTE 3.
E
SEMI-FLUSH MOUNTING
4" SQ. X 1-1/2" DEEP BACKBOX TO BE MOUNTED IN WALL
SEMI-FLUSH PLATE WITH (2) #8-32 SCREWS
SIGNAL
(2) #8-32 SCREWS
(2) #10-32 SELF TAPPING SCREWS
F
FLUSH MOUNTING
4" SQ. X 2-1/8" DEEP BACKBOX
SIGNAL
(2) #8-32 SCREWS
(2) #10-32 SELF TAPPING SCREWS

CAUTION

BACKBOXES SHOWN ARE MINIMUM RECOMMENDED SIZE. BE SURE TO USE RECOMMENDED OR LARGER BOXES FOR SUFFICIENT WIRING CLEARANCE. THE NATIONAL ELECTRIC CODE (ARTICLE 370-6) LIMITS THE MAXIMUM NUMBER OF CONDUCTORS THAT CAN ENTER A BACKBOX DEPENDING UPON SIZE OF THE BOX AND SIZE OF THE WIRING USED. USE AN EXTENSION RING WITH THE 4 INCH SQUARE BACKBOX IF NECESSARY TO COMPLY WITH NEC REQUIREMENTS.

Maximum recommended no. of conductors for each mounting option.

Mounting Option	Size of Conductor			
	#18	#16	#14	#12
A	14	12	10	9
B •	16	16	16	16
C	14	12	10	9
D	10	8	7	6
E	8	7	6	5
F	13	11	10	9

- **For Mounting Option B, use separate conduit entrances for in-out wiring if necessary to comply with the National Electric code (Article 370-6) which limits the maximum number of conductors in a conduit.**

APPLICATION INFORMATION

These signals should be installed and tested in accordance with these instructions and local and state codes. In addition, all signals should be tested at least twice a year and more often if dictated by local and state codes. The installation of this product must conform to these instructions and applicable codes. IF ANY WORDS OR LETTERS APPEAR ON THE PRODUCT INDICATING A PARTICULAR USE, THE PRODUCT MUST BE USED ONLY IN THE MANNER SO INDICATED. FIELD ADJUSTMENT OR REPAIR OF THESE SIGNALS SHOULD NOT BE ATTEMPTED. Malfunctioning units should be returned for factory repair or replacement in accordance with Wheelock Inc's published "terms and conditions".

CAUTION: THESE DEVICES ARE NOT INTENDED FOR USE IN HAZARDOUS LOCATIONS AS DEFINED BY THE NATIONAL ELECTRICAL CODE (NEC) AND BY THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA). CONTACT WHEELOCK INC. FOR INFORMATION ON EXPLOSION-PROOF DEVICES DESIGNED FOR HAZARDOUS LOCATIONS.

1. For weather resistent installation, use outdoor mounting option. Outdoor backbox must be mounted vertically with "TOP" as marked to allow any moisture or condensation to drain properly through drain holes on bottom of backbox.

2. For outdoor installation, it is recommended that these units be mounted in a location that minimizes prolonged exposure to rain, snow or direct sunlight. Exposure to the outdoor elements, including prolonged exposure to sunlight, can cause lens lettering to fade. Periodic checking for the fading of letters is advised. If you discover that a lens is faded, you should order a replacement lens.

3. The EHS Series has a brief in-rush during initial start-up (.100A for 10 milliseconds for the 24VDC models and .150A at 10 milliseconds for the 12VDC models). The DC strobe used on the EH-DL(EL)-(INDEPENDENT strobe) also have a brief in-rush (up to 3 times rated current for 10 milliseconds). Peak current limitation will not prevent start-up or affect the output of these signals. Power supply requirements should be based on rated current draw. Make sure the system power supply is compatible with the specified in-rush current.

4. All Electronic Horns and Strobe Horns will operate on full-wave-rectified (unfiltered) DC as well as pure (filtered) DC over a voltage range of +/- 20% of nominal rated voltage.

5. For coded systems and march time systems, up to 120 cycles per minute, the EH Series Horns and the horn portion of the EH-DL(EL) Strobe Horns are recommended.

6. The polarity shown in the wiring diagrams is for proper operation of the signal.

7. Each input terminal accepts (2) leads for in-out wiring of 12-22 AWG wire. Break wire run to provide electrical supervision. Strip leads approximately 3/8" for connection to terminals.

8. Select conduit entrance to maximize wiring clearance. (Refer to mounting information.)

9. Anechoic dB ratings are for "free field" (anechoic) conditions. Typical indoor sound output is usually higher than rated anechoic dB.

WARNING: LIMITATIONS OF AUDIBLE AND VISUAL SIGNALING DEVICES

WHEELOCK'S AUDIBLE AND VISUAL SIGNALING DEVICES ARE DESIGNED TO PROVIDE FIRE AND SECURITY HAZARD WARNING.

These devices WILL NOT WORK WITHOUT POWER. The devices are powered from the Fire or Security panel monitoring the alarm system. If power is cut off for any reason, the devices will not provide the desired audible or visual warning.

AUDIBLE SIGNAL MAY NOT BE HEARD: The loudness of Wheelock's audible signaling devices meet or exceed current Underwriters Laboratories' standards. However, the devices may not alert a sound sleeper or one who has recently used drugs or has been drinking alcoholic beverages. The devices may not be heard by an alert person if the signal is placed in an area which is isolated by a closed door, or if located on a different floor from the person in a hazardous situation or if placed too far away to be heard over ambient noise such as traffic, air conditioners, machinery or musical appliances. THE AUDIBLE SIGNAL MAY NOT BE HEARD BY PERSONS WHO ARE HEARING IMPAIRED.

VISUAL SIGNAL MAY NOT BE SEEN: Wheelock's visual signaling devices meet or exceed current Underwriters Laboratories' standards. These visual signals are suitable for direct viewing and must be installed within an area where they can be seen by building occupants. The devices must not be installed in direct sunlight or areas of high light intensity where the visual signal might be disregarded or not seen. The devices may not alert persons who are sleeping or who have their eyes closed, or individuals who are under the influence of drugs or alcohol. THE VISUAL SIGNAL MAY NOT BE SEEN BY THE VISUALLY IMPAIRED.